

PATENT APPLICATION TRANSMITTAL LETTER
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Docket No.
INTL-0448-US (P9559)

TO THE ASSISTANT COMMISSIONER FOR PATENTS

Transmitted herewith for filing under 35 U.S.C. 111 and 37 C.F.R. 1.53 is the patent application of:

JIM B. ESTIPONA

For: ANNOUNCING THE AVAILABILITY OF AN ELECTRONIC PROGRAMMING GUIDE TO RECEIVERS
ENHANCED TELEVISION TRANSMISSIONS

Enclosed are:

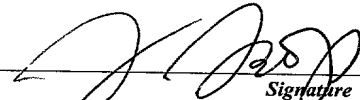
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Total Claims	25	- 20 =	5	x \$18.00	\$90.00
Indep. Claims	6	- 3 =	3	x \$78.00	\$234.00
Multiple Dependent Claims (check if applicable) <input type="checkbox"/>					\$0.00
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Dated: August 31, 2000


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21906

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PATENT TRADEMARK OFFICE

APPLICATION

FOR

UNITED STATES LETTERS PATENT

TITLE: ANNOUNCING THE AVAILABILITY OF AN
ELECTRONIC PROGRAMMING GUIDE TO
RECEIVERS OF ENHANCED TELEVISION
TRANSMISSIONS

INVENTORS: JIM B. ESTIPONA

Express Mail No.: EL594059791US

Date: August 31, 2000

ANNOUNCING THE AVAILABILITY OF AN
ELECTRONIC PROGRAMMING GUIDE TO RECEIVERS
OF ENHANCED TELEVISION TRANSMISSIONS

Background

This invention relates generally to interactive or enhanced television content.

Interactive or enhanced television content generally
5 involves the distribution of television programming
accompanied by additional content. The additional content,
sometimes called an enhancement, may be accessed within the
broadcast stream or at a remote location, for example over
the Internet. The additional content may be described as a
10 resource that may be accessed through a trigger broadcast
with the enhanced television content. In an enhanced
television distribution system, announcements are used to
announce currently available programming to the receiver.
Having received the announcement, a receiver may listen to
15 a specified port and address to obtain the announced
information.

An electronic programming guide (EPG) is content that
is used to determine the programming related information
available on a current connection. A current connection
20 may be an analog or digital video distribution source. As
examples, a connection may include a cable connection, a
broadcast connection or a satellite connection. An

electronic programming guide may be in the form of a graphical user interface or presentation files that indicate a channel-to-programming map or channel map. The guide enables the user to determine what programs are available on what channels.

In enhanced television distribution schemes, an electronic programming guide may be distributed through the television content distribution system. An electronic programming guide may actually be distributed to a plurality of receivers or at least the electronic programming guide may be sufficiently identified through the broadcast data to enable it to be accessed by the receiver.

Conventionally, the distribution of an electronic programming guide is indicated in different ways in different television distribution systems. For example, Broadcast Plus may utilize announcements with a required field a=cid:XXXX. Other entities send such announcements without the required Broadcast Plus format. Thus, Broadcast Plus can not receive the enhancements based for example on the client tool kit distributed by Intel Corporation. Similarly, WebTV® based content (from Microsoft Corporation) announces the availability of various resources in different ways. Thus, there is no uniform way to announce the availability of an electronic

programming guide that is recognized by all the available system/software providers.

Therefore, there is a need for a way to enable receivers to determine that an electronic programming guide is available regardless of the hardware or software utilized.

Brief Description of the Drawings

Figure 1 is a schematic depiction of one embodiment of the present invention;

Figure 2 is a flow chart for software in accordance with one embodiment of the present invention; and

Figure 3 is a flow chart for software in accordance with another embodiment of the present invention.

Detailed Description

Referring to Figure 1, an enhanced television content distribution system 10 may include a broadcast head end 12 that distributes the enhanced television content. The head end 12 distributes the content over a transport 14. The transport 14 may include a cable, airwave, or satellite distribution system, as examples.

In some embodiments, the broadcast head end 12 may distribute the content directly to receivers which do not thereafter rebroadcast the content but rather, make the content available for viewing on the receiver itself. In other cases, the content may be rebroadcast by a

rebroadcaster or network operating center (NOC). Thus, as illustrated in Figure 1, an NOC 16 may be coupled to the head end 12 by a transport 14. Similarly, the NOC 16 may be coupled to a plurality of receivers 20 by a transport 18. The transports 14 and 18 may utilize different technologies.

Each receiver 20 may include a storage device 22 that stores software including an announcement handler 26 and an EPG listener 100. The announcement handler 26 listens for announcements in the distributed content and provides an indication for that announcement to the receiver 20. For example, information about available enhancements may be displayed on a monitor or television associated with the receiver 20. In addition, the storage 22 may include a cache 24. The cache 24 may be utilized to cache enhancements, such as an EPG, that are identified by the announcement handler 26, in some embodiments of the present invention.

The announcement handler software 26, shown in Figure 1, begins by listening to well known Internet Protocol (IP) address and port for announcements. That is, the receiver 20 is aware of established ports and addresses for announcements. The distribution of enhanced television content is well established and may be implemented in accordance with known protocols.

One such protocol is the Advanced Television Enhancement Form (ATVEF) Specification, Draft Version 1.1 r.26, updated February 2, 1999. That specification includes standards for announcements and provides a specific announcement protocol. For example, announcements may be implemented in accordance with the session description protocol (SDP) promulgated by the Network Working Group and published as Request for Comments (RFC) 2327 dated April 1998. The IP multicast addresses and ports for resource transfers are announced using SDP announcements. Announcements may be sent on a well known address (224.0.1.113) and port (2670) pursuant to the ATVEF specification.

The ATVEF announcement protocol sets forth a well established SDP header format. That format includes a session description including a protocol version, an owner/creator and session identifier, a session name, and additional information set forth for example in the ATVEF specification. The owner/creator and session identifier field specifies a user name, session identifier (sid) and version followed by an IP address, as set forth in the ATVEF specification. The session identifier is a Network Time Protocol (NTP) value as identified in the NTP Version 3 Specification, published by D. Mills as RFC 1305 on March 1992. The UNIX time is basically an offset value to the NTP value. The next field in the announcement protocol is

the session name which is a required field. It is specified by the variable s equals the appropriate name.

In accordance with one embodiment of the present invention, the session identifier or sid is specified to be equal to the UNIX zero time value (which necessarily otherwise would never be utilized). The UNIX zero time value is equivalent to the NTP value 2208988800. Thus, the announcement protocol may specify a sid equal to 2208988800. The session name may be specified as "program guide" or s equals program guide. In this way, a well established session identifier and session name may be utilized by all broadcasting entities. This protocol enables an electronic programming guide to be readily identified in any format or system. In addition, by providing the session name "program guide" in the announcement protocol, a user viewable list or display box may be displayed to advise the user of the availability of a program guide.

Thus, an example of a hypothetical announcement protocol, compliant with the ATVEF specification, in accordance with one embodiment of the present invention, is as follows:

v = 0

o = -2208988800 2890844526 IN IP4

tve.niceBroadcaster.com

s = program guide


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    e = help@niceBroadcaster.com
    a = UUID:f8ld4fae-7dec-11do-a765-00a0c91e6bf6
    a = type:tve
    a = tve-level:1.0
5    t = 2873397496 0
    a = tve-ends:30000
    a = tve-type:primary
    m = data 52127/2 tve-file/tve-trigger
    c = IN IP4 224.0.1.112/127
10   b = CT:100
    a = tve-size:1024
    m = data 52127/2 tve-file/tve-trigger
    c = IN IP4 224.0.0.1/127
    b = CT:1024

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15   a = tve-size:4096

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Thus, the second line, second variable specifies a program guide by the use of a unique number corresponding to the UNIX zero value. The third line specifies a session name "program guide" which may be extracted and displayed in a human readable format.

Returning to Figure 2, an announcement may be detected as indicated at 104 by the announcement handler 26. When an announcement is detected, the header's SDP fields are parsed as indicated in block 106. If the announcement is valid, as determined at diamond 108, a check at diamond 110

determines whether a program guide is announced. The determination of whether an electronic programming guide is being announced is based on the number in the session identifier (sid) field.

5 If an electronic programming guide has been announced, a check at diamond 112 determines whether the electronic programming guide is already cached in the cache 24. If so, or if the announcement does not relate to an electronic programming guide, the announcement is processed normally
10 as indicated in block 114. In the case where the electronic programming guide is not already stored in the cache 24, a resource handler/listener may be created as indicated in block 116. A trigger Internet Protocol address and port number contained in the SDP header may be
15 identified at diamond 118. If so, a trigger handler listener may be developed (block 120). Otherwise, the software simply iterates, having received the appropriate announcements.

Embodiments of the present invention do not require a
20 back channel or uplink to acquire the electronic programming guide. Avoiding the need for an uplink to acquire the electronic programming guide may make the receiver more robust to network or modem failures, geographical difficulties/differences and may also lower
25 the initial cost of ownership of the receiver while reducing the uplink channel subscription cost as well. In

addition, a fully ATVEF-compliant announcement needs no special session attribute in the SDP header to ensure that the announcement will be recognized by ATVEF-compliant receivers. Moreover, no optional field is needed in the
5 ATVEF SDP header for the EPG announcement. In addition, a special channel for the electronic programming guide is not needed but instead may be accessed as any type of enhancement may be accessed in an enhanced television broadcast.

10 As shown in Figure 1, the head end 12 may also include a storage 122. The head end may include a processor-based system which is capable of executing software such as the software 124 stored on the storage 122.

Referring to Figure 3, the software 124 facilitates
15 the distribution of enhanced television content that identifies an electronic programming guide for the enhanced content. Initially, an announcement is developed with the special session identifier and session name described previously and as indicated in block 126. The electronic
20 programming guide related content is then obtained as indicated in block 128. The electronic programming guide related content and the announcement may be broadcast at the same or different times as indicated in block 130.

While the present invention has been described with
25 respect to a limited number of embodiments, those skilled in the art will appreciate numerous modifications and

variations therefrom. It is intended that the appended claims cover all such modifications and variations as fall within the true spirit and scope of this present invention.

What is claimed is:

1 1. A method comprising:
2 transmitting enhanced television content; and
3 transmitting an announcement for said enhanced
4 television content, said announcement including a session
5 identifier having a value announcing the availability of an
6 electronic programming guide for said enhanced television
7 content.

1 2. The method of claim 1 wherein transmitting an
2 announcement includes transmitting the announcement in a
3 session description protocol.

1 3. The method of claim 2 wherein transmitting an
2 announcement includes transmitting a unique session
3 identifier which identifies an electronic programming
4 guide.

1 4. The method of claim 3 including transmitting a
2 session identifier which is a unique number.

1 5. The method of claim 4 wherein transmitting a
2 session identifier includes transmitting the number
3 2208988800.

1 6. The method of claim 1 including transmitting a
2 session name.

1 7. The method of claim 6 wherein transmitting a
2 session name includes transmitting a human readable session
3 name indicative of an electronic programming guide.

1 8. An article comprising a medium storing
2 instructions that enable a processor-based system to:
3 transmit enhanced television content; and
4 transmit an announcement for said enhanced
5 television content, said announcement including a session
6 identifier having a value announcing the availability of an
7 electronic programming guide for said enhanced television
8 content.

1 9. The article of claim 8 further storing
2 instructions that enable the processor-based system to
3 transmit the announcement in a session description
4 protocol.

1 10. The article of claim 9 further storing
2 instructions that enable the processor-based system to
3 transmit a unique session identifier that identifies an
4 electronic programming guide.

1 11. The article of claim 10 further storing
2 instructions that enable the processor-based system to
3 transmit a session identifier that is a unique number.

1 12. The article of claim 11 further storing
2 instructions that enable the processor-based system to
3 transmit the number 2208988800.

1 13. The article of claim 8 further storing
2 instructions that enable the processor-based system to
3 transmit a human readable session name indicative of an
4 electronic programming guide.

1 14. A system comprising:
2 a processor-based transmitter; and
3 a storage, coupled to said processor-based
4 transmitter, said storage storing instructions that enable
5 enhanced television content and an announcement for said
6 enhanced television content to be transmitted, said
7 announcement including a session identifier having a value
8 announcing the availability of an electronic programming
9 guide for said enhanced content.

1 15. The system of claim 14 wherein said storage
2 further stores instructions that enable the device to
3 transmit a session identifier that is a unique number.

1 16. The system of claim 15 wherein said storage
2 stores instructions that enable the device to transmit the
3 number 2208988800.

1 17. A method comprising:
2 enabling a receiver to receive enhanced
3 television content; and
4 enabling the extraction from said content of an
5 announcement for said enhanced television content, said
6 announcement including a session identifier having a value
7 announcing the availability of an electronic programming
8 guide.

1 18. The method of claim 17 including determining
2 whether the enhanced television content includes an
3 electronic programming guide.

1 19. The method of claim 18 including determining
2 whether an electronic programming guide has already been
3 cached.

1 20. The method of claim 19 including processing the
2 announcement without regard for the electronic programming
3 guide if the programming guide is already cached.

1 21. An article comprising a medium storing
2 instructions that enable a processor-based system to:
3 enable a receiver to receive enhanced television
4 content; and
5 enable the extraction from said content of an
6 announcement for said enhanced television content, said
7 announcement including a session identifier having a value
8 announcing the availability of an electronic programming
9 guide.

1 22. The article of claim 21 further including
2 instructions that enable the processor-based system to
3 determine whether the enhanced television content includes
4 a programming guide.

1 23. The article of claim 22 further storing
2 instructions that enable the processor-based system to
3 determine whether the electronic programming guide has
4 already been cached and if so, process the announcement
5 without regard to the electronic programming guide.

1 24. A system comprising:
2 a processor-based receiver; and
3 a storage coupled to said processor-based
4 receiver, said storage storing instructions that enable the
5 extraction, from enhanced television content received by

6 said receiver, of an announcement for said enhanced
7 television content, said announcement including a session
8 identifier having a unique value announcing the
9 availability of an electronic programming guide.

1 25. The system of claim 24 wherein said storage
2 stores instructions that enable the extraction of a value
3 corresponding to the number 2208988800.

ANNOUNCING THE AVAILABILITY OF AN
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Abstract of the Disclosure

A unique session identifier may be utilized to
announce the availability of an electronic programming
guide to users of an enhanced television distribution
5 system. In some embodiments, the unique session identifier
may be utilized in a variety of systems to provide a
uniform way of recognizing the availability of an
electronic programming guide in conjunction with enhanced
television distribution systems.

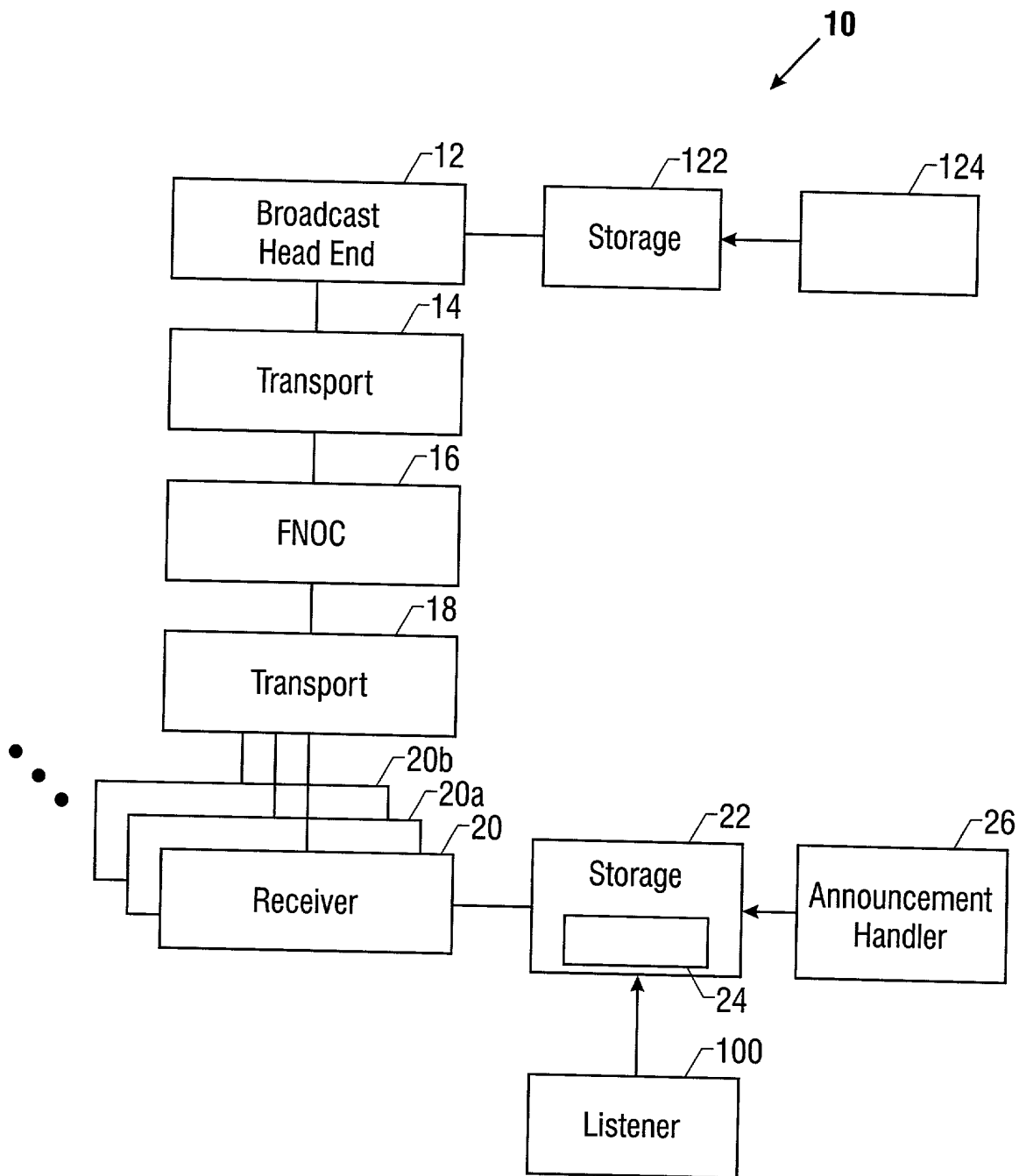


FIG. 1

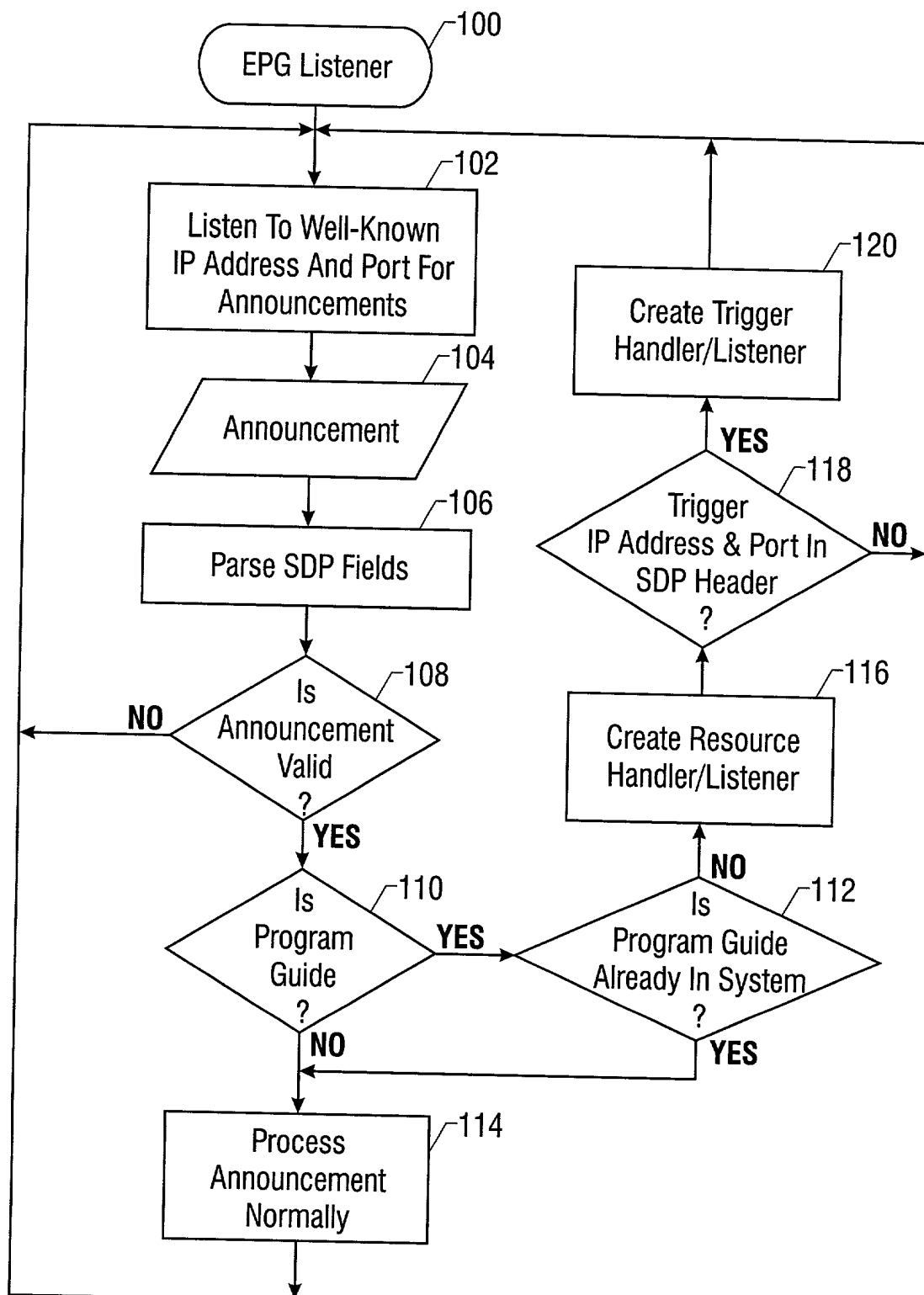


FIG. 2

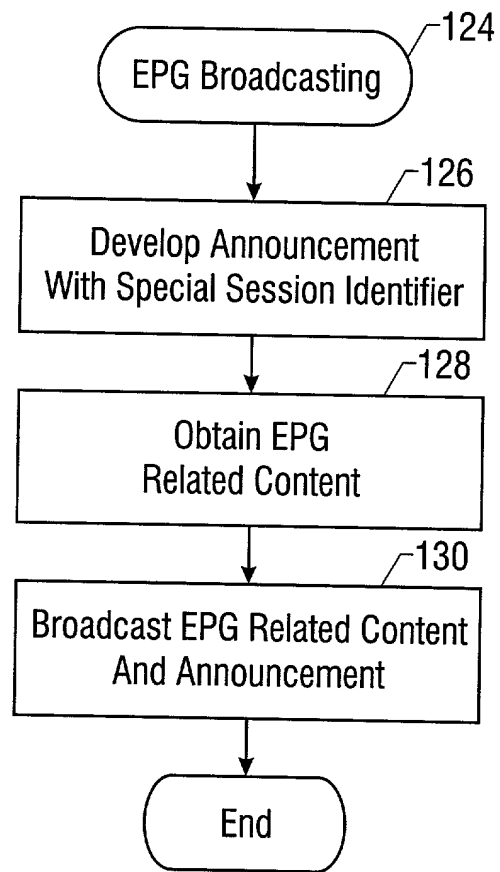


FIG. 3

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below, next to my name.

I believe I am the original, first, and sole inventor (if only one name is listed below) or an original, first, and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

**ANNOUNCING THE AVAILABILITY OF AN ELECTRONIC PROGRAMMING
GUIDE TO RECEIVERS OF ENHANCED TELEVISION TRANSMISSIONS**

the specification of which

X	is attached hereto.
	was filed on _____ as
	United States Application Number _____
	or PCT International Application Number _____
	and was amended on _____
	(if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claim(s), as amended by any amendment referred to above. I do not know and do not believe that the claimed invention was ever known or used in the United States of America before my invention thereof, or patented or described in any printed publication in any country before my invention thereof or more than one year prior to this application, that the same was not in public use or on sale in the United States of America more than one year prior to this application, and that the invention has not been patented or made the subject of an inventor's certificate issued before the date of this application in any country foreign to the United States of America on an application filed by me or my legal representatives or assigns more than twelve months (for a utility patent application) or six months (for a design patent application) prior to this application.

I acknowledge the duty to disclose all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119(a)-(d), of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

<u>Prior Foreign Application(s):</u>			<u>Priority Claimed</u>	
Number	(Country)	(Day/Month/Year Filed)	Yes	No
Number	(Country)	(Day/Month/Year Filed)	Yes	No
Number	(Country)	(Day/Month/Year Filed)	Yes	No

I hereby claim the benefit under title 35, United States Code, Section 119(e) of the United States provisional application(s) listed below:

_____	_____
(Application Number)	(Filing Date)
_____	_____
(Application Number)	(Filing Date)

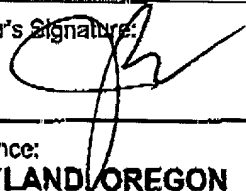
I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, Section 112, I acknowledge the duty to disclose all information known to me to be material to patentability as defined in Title 37, Code of Federal regulations, Section 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application:

_____	_____	_____
(Application Number)	Filing Date	(Status-patented, pending, abandoned)
_____	_____	_____
(Application Number)	Filing Date	(Status-patented, pending, abandoned)

I hereby appoint Timothy N. Trop, Reg. No. 28,994; Fred G. Pruner, Jr., Reg. No. 40,779 and Dan C. Hu, Reg. No. 40,025 my patent attorneys, of TROP, PRUNER & HU, P.C., with offices located at 8554 Katy Freeway, Ste. 100, Houston, TX 77024, telephone (713) 468-8880, and Mirho, Charles A.; Registration No. 41,199; Novakoski, Leo V.; Registration No. 37,198; Reynolds, Thomas C.; Registration No. 32,488; Seddon, Kenneth M.; Registration No. 43,105; Seeley, Mark; Registration No. 32,299; Skabrat, Steven P.; Registration No. 36,279; Skaist, Howard A.; Registration No. 36,008; Su, Gene I.; Registration No. 45,140; Wells, Calvin E.; Registration No. 43,256; Werner, Raymond J.; Registration No. 34,752; Winkle, Robert G.; Registration No. 37,474; and Young, Charles K.; Registration No. 39,435 my patent attorneys, of INTEL CORPORATION with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith.

Send correspondence to Timothy N. Trop, TROP, PRUNER & HU, P.C., 8554 Katy Freeway, Ste. 100, Houston, TX 77024 and direct telephone calls to Timothy N. Trop, (713) 468-8880.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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